SRM SPOTLIGHT

March 2006 Editor: Regina R. Montgomery

Inside:

New NIST RMs/SRMs

NIST SRM 1082 Cigarette Ignition Strength Standard

Cigarettes are the single largest igniters of fatal fires in the United States. Each year, these fires cause about 800 deaths, 1,800 serious injuries, and $400 million in direct property damage. The total cost of these fires exceeds $4 billion annually.

Under two Congressionally funded studies (1984 through 1987 and 1990 through 1993); NBS/NIST developed scientific understanding of the ignition process and a test method for measuring the propensity of cigarettes to ignite upholstered furniture and bedding that has evolved into ASTM E2187-02b, "Standard Test Method for Measuring the Ignition Strength of a Cigarette." This was subsequently amended to become ASTM E2187-04, with the same title.

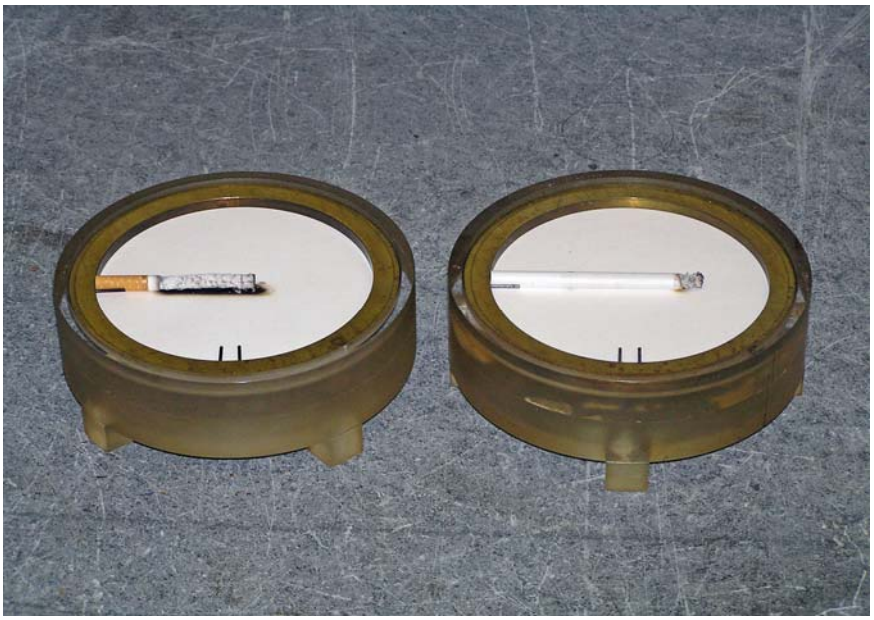
In 2000, the State of New York (NYS) passed legislation requiring that all cigarettes sold in the State meet a standard for low risk of igniting household furnishings. The NYS Office of Fire Prevention and Control (OFPC) published its standard in January 2004, the first in the world. It selected the ASTM method and imposed a requirement that no more than 25 percent of 40 tested cigarettes burn their full length when placed on 10 layers of standard filter paper. Subsequent regulation by the Dominion of Canada and the states of Vermont and California all use the same test method and the same pass/fail criterion.

It is expected that 20 or more laboratories are or will be performing testing of commercial cigarettes, whether to certify that their products meet the standard or to determine the actual degree of compliance. By the time compliance testing begins, there will be a need to ascertain the degree to which all the laboratories are obtaining consistent results relative to the NYS pass/fail criterion.

NIST SRM 1082 Cigarette Ignition Strength Standard (continued)

In response to requests from the cigarette companies, the New York OFPC, and Health Canada, NIST has developed SRM 1082. The SRM is a carton of uniform cigarettes, manufactured for NIST by Philip Morris USA.

Extensive testing by NIST, the National Research Council of Canada, and Kidde-Fenwal, Inc. found that the cigarettes manifested 12.6 % ± 3.3 % full-length burns. This value meets the criteria of being near (a) the required pass/fail criterion and (b) the value to which cigarette companies would need to design products in order to assure success during compliance testing, a value which is somewhat lower than the regulatory pass/fail criterion. Use of this SRM will enable testing laboratories to assure that their measurements are accurate, are of the proper quality control, and are not varying over time.



Cigarette performance under ASTM E2187-04. Left: a full-length burn; right: an extinguishment.

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NIST SRM 2061 Ti Alloy, Al-Nb-W
NIST SRM 2062 Ti Alloy, Al-Nb-W

A TiAl(NbW) alloy was recently issued as two new NIST SRMs. They were developed for the aerospace industry for use in microanalysis (SRM 2061) and x-ray fluorescence (XRF) spectrometry (SRM 2062).

The material was tested for micro-heterogeneity and macro-heterogeneity with wavelength dispersive spectrometer - electron probe microanalysis (WDS-EPMA) and WDS-XRF. The overall relative expanded uncertainties for heterogeneity including the experimental uncertainty was 1.1 % for Al and 0.92 % for Ti, 3.0 % for Nb, and 8.8 % for W. The bulk material was analyzed with inductively coupled plasma-optical emission spectroscopy (ICP-OES) and WDS-XRF. The NIST certified values for the elements in % mass fraction with expanded uncertainties are Al 30.31 ±0.31, Ti 53.94 ±0.34, Nb 10.87 ±0.10, and W 4.38 ±0.11.

Technical Contact: Ryna Marinenko
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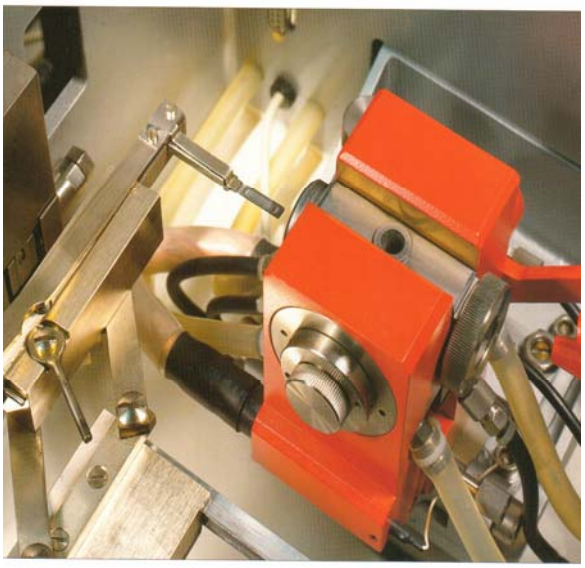
NIST SRM 2703 Sediment for Solid Sampling (Small, Sample) Analytical Techniques

The analysis of solid materials by introducing solid test samples directly into the graphite furnace or the plasma of an atomic absorption, emission, or mass spectrometer must be regarded as a powerful analytical approach. After three decades of development, the instrumentation and the methodology are available to apply solid sampling successfully for the analysis of almost every material in the form of about 0.1 mg to 1 mg solid test portions. A significant problem in the use of these emerging solid sample techniques is a general lack in suitable certified reference materials for calibration and quality assurance purposes. No Standard Reference Materials® (SRMs) have been certified for the small sample sizes typically used for these techniques. Direct utilization of most existing SRMs in solid sampling analysis procedures is often unreliable because trace components may not be sufficiently homogeneously distributed in the sample, and their homogeneous distribution has not been validated for sample sizes below 100 to 250 mg.



Origin of Photo www.analytik-jena.de

NIST SRM 2703 Sediment for Solid Sampling (Small, Sample) Analytical Techniques (continued)

NIST homogeneous distribution has not been validated for sample sizes below 100 to 250 mg. NIST has now developed the highly homogeneous SRM 2703. The certification of SRM 2703 included ten expert laboratories with active research programs in solid sampling techniques. In combination with the analytical capabilities at NIST, including the extensive characterization of the parent material SRM 2702, it was possible to provide certified and reference mass fractions for 29 elements for a sample size of 0.7 mg. This product was then tested by INAA for acceptance, and subsequently during the certification campaign further characterized for its small sample homogeneity by micro-XRF, micro-PIXE, and laser ablation ICP-MS. These techniques confirmed reproducibility of results at microgram sample sizes.

This material forms a new benchmark for homogeneity in a natural matrix SRM. It will help to fill a critical gap in the availability of SRMs to the growing use of solid sampling techniques in industrial, environmental, clinical, and other applications.

Technical Contact: Rolf Zeisler
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NIST SRM 2737 - 500 nmol/mol (0.5 ppm) Nitric Oxide in Nitrogen
NIST SRM 2738 - 1000 nmol/mol (1.0 ppm) Nitric Oxide in Nitrogen

Nitric oxide (NO) is an important gaseous pollutant in ambient air because it spontaneously oxidizes to form nitrogen dioxide (NO_2) and nitric acid (HNO_3) which are components of smog and acid rain. NO is produced during combustion processes such as the burning of gasoline in automobiles and the burning of fuel oils and natural gas to generate electric power.

The new SRMs were requested by the American Industry/Government Emissions Research (AIGER) consortium to facilitate the automobile industry meeting more stringent 2003 Federal Tier II and California LEV II emission regulations. Newer vehicles produce lower levels of nitric oxide and other pollutants because of fuel injection where air-to-fuel ratios are optimized by an on-board computer. These emission levels are reduced further by more efficient catalytic converters. During Federal or State emission testing, the tailpipe exhaust levels are further diluted with clean air and then collected using constant volume sampling bags; or by using the new mini-diluter technology. The final concentration of nitric oxide measured could easily be lower than 1 µmol/mol (ppm).

NIST developed the new SRMs in collaboration with AIGER who provided funding to purchase candidate mixtures that were then certified by NIST, including monitoring the mixtures for stability over a five year period. The new SRMs are provided in 30 liter (water volume) aluminum compressed gas cylinders with a stainless steel valve with a CGA 660 valve outlet. The SRM user will have more than 3600 liters of useable gas standard supplied from this package.

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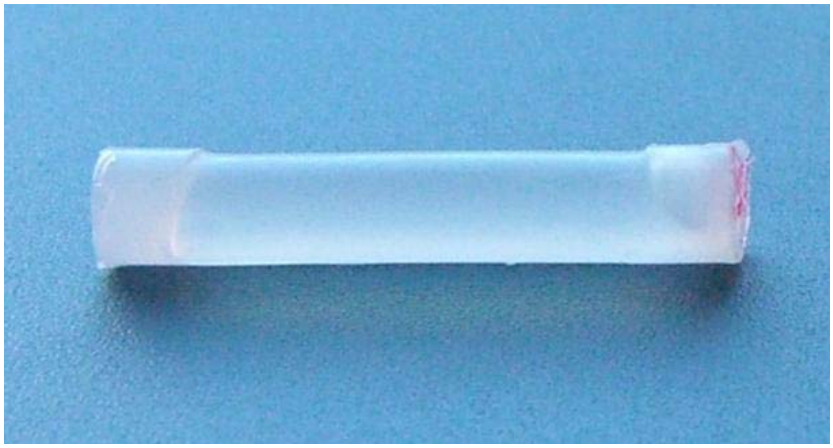
NIST Radon-222 Emanation Standards SRMs 4971, 4972, 4973, and 4974

These new SRMs replace SRM 4968, a radon-222 emanation standard, developed and certified in 1994. The radon emanation standard consists of approximately 0.2 mL of radium-226 solution heat-sealed inside a polyethylene capsule. Each standard is characterized by accurately measured radium solution activity and by emanation fraction, which is the ratio of maximal possible radon activity to radium activity. The radium activity is about 5 Bq for SRM 4971, 50 Bq for SRM 4972, 500 Bq for 4973, and 5000 Bq for 4974. Emanation fraction is in the interval of 85-87% for all capsules.

The radon industry needs safe, simple, and reliable radon standards for radon monitoring calibrations. The new NIST standards can be used in two different modes: accumulation and in-flow mode. In the accumulation mode the NIST radon standard is placed inside a test chamber for a few days and produces a known amount of radon inside the chamber. The SRM certificate contains all formulas needed to calculate this activity with better than 2% accuracy. Depending on the volume of a test chamber one of the low-activity standards (SRM 4971, 4972, or 1973) is used in accumulation mode.

In the in-flow mode the high-activity standard (SRM 4973 or 4974) is placed into the tube with airflow (see image below). The airflow strips radon from the surface of the plastic capsule, delivers it to the test chamber until the steady concentration of radon is reached. Depending on the test chamber volume and on the air flow this may take from a few minutes to a few days. The in-flow method of radon monitor calibration is much faster than the accumulation method. The certification of NIST SRM capsules for the in-flow method is underway.



Technical Contact: Peter Volkovitsky
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New Sulfur in Diesel Fuel RM 8771 Sulfur in Diesel Fuel Blend Stock Supports Introduction of Ultra Low Sulfur Diesel (ULSD)

New Sulfur in Diesel Fuel RM Supports Introduction of Ultra Low Sulfur Diesel (ULSD)

NIST has developed a new ultra low level sulfur in diesel fuel reference material, RM 8771 Sulfur in Diesel Fuel Blend Stock, to assist the petroleum industry in meeting the new US Environmental Protection Agency's 15 mg/kg cap on sulfur in transportation diesel fuel (ULSD) which takes effect on June 1, 2006. The ULSD will enable new after-treatment technology to reduce particulates in diesel emissions. The EPA estimates that 2010 Tier 4 highway heavy-duty and nonroad diesel regulations when fully implemented will provide approximately $150 billion annually in health and welfare benefits to the American public.

The sulfur reference value for this material was estimated at 0.071 ± 0.014 mg/kg using a gravimetric standard addition procedure designed by NIST and performed at ConocoPhillips Company (Bartlesville, OK) using thermal oxidation with a UV fluorescence detector. A series of mixtures was prepared and measured by gravimetric mixing of RM 8771 with two different Standard Reference Material (SRM) diesel fuels that were certified for sulfur by isotope dilution. This RM can be used as blank natural matrix materials to check the near zero point on calibration curves and can be blended gravimetrically with existing diesel fuel SRMs to prepare calibration standards and check samples as described in a forthcoming NIST publication.[1]

This reference material became available for purchase on July 8, 2005. Each unit is 100 mL. This material was used in the summer of 2005 in an EPA ULSD proficiency test program that included more than 100 laboratories preparing to meet June 2006 regulations.

When final certification of the sulfur content is completed, RM 8771 will be designated as SRM 2771.

1. Kelly, W.R., MacDonald, B.S., and Leigh, S.D. to be submitted to the *Journal of ASTM International*

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NIST RM 8785 Air Particulate Matter on Filter Media
NIST RM 8786 Filter Blank

Combustion aerosol has a major influence on air quality and is known to have a direct and indirect impact on the Earth's radiative forcing. For the most part, man's activities are linked to these emissions and account for a significant amount of the total carbon aerosol found in the atmosphere. To assess impacts and distinguish sources of combustion aerosol, numerous methods exist to quantify the amount of organic and black (soot) carbon, important in addressing air quality issues and estimating the warming and cooling effects of aerosol on our climate system. However, all these analytical methods are method dependent and result in various definitions of what constitutes black carbon.

SRI Dust Generation and Collection System

Researchers in the Analytical Microscopy Group of the Chemical Science and Technology Laboratory (CSTL) and the Statistical Modeling and Analysis Group of the Information Technology Lab (ITL) have collaborated with SRI International (Menlo Park, CA) to produce Reference Material (RM) 8785 Air Particulate Matter (PM) on Filter Media[1] and its Filter Blank (RM 8786). RM 8785 was produced by resuspending SRM 1649a Urban Dust, sampling its fine fraction (< 2.5 μm aerodynamic diameter) and filtering the $PM_{2.5}$ onto nearly 2000 quartz-fiber filters. Filter ID number and the gravimetrically determined mass of fine SRM 1649a uniquely identify each filter. RM 8785 is intended primarily for use in the evaluation of analytical methods used to characterize the carbon composition of atmospheric $PM_{2.5}$ for national ambient air quality standards (NAAQS) monitoring programs. Additionally, RM 8785 will provide the atmospheric chemistry and ocean-sciences community with a means to intercompare methods and laboratories for the measurement of black carbon.

Through an inter–laboratory and –method comparison involving NIST, the Desert Research Institute (Reno, NV) and Sunset Laboratories Inc. (Tigard, OR), concentrations of total carbon, black carbon and organic carbon were measured and values were assigned. Measurements were performed using two widely used thermal-optical methods: the Interagency Monitoring of Protected Visual Environments (IMPROVE) and the Speciation Trends Network-National Institute of Occupational Safety and Health (STN-NIOSH). RM 8785 has been assigned a reference value for total carbon concentration and information values for black and organic carbon concentrations corresponding to each method.

Technical Contacts: George A. Klouda (CSTL) and James J. Filliben (ITL)
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[1] *Klouda, G.A. et al. (2005). Aerosol Sci. Technol. 39:173-183.*

Renewals

SRM 350b Benzoic Acid (Acidimetric)

SRM 674b X-Ray Powder Diffraction Intensity Set for Quantitative Analysis by X- Ray Powder Diffraction

SRM 927d Bovine Serum Albumin (7% Solution)

SRM 1588b Organics in Cod Liver Oil

SRM 1597a Complex Mixture of Polycyclic Aromatic Hydrocarbons Coal Tar

SRM 1677c Carbon Monoxide in Nitrogen

SRM 1683b Nitric Oxide in Nitrogen Lot # 45-U-XX

SRM 1684b Nitric Oxide in Nitrogen Lot # 44-S-XX

SRM 1693a Sulfur Dioxide in Nitrogen Lot # 96-K-XX

SRM 2614a Carbon Monoxide in Air Lot # 21-G-XX

SRM 2629a Nitric Oxide in Nitrogen Lot # 50-G-XX

SRM 3191 Aqueous Electrolytic Conductivity Lot # 050403

SRM 3198 Aqueous Electrolytic Conductivity Lot # 050803

SRM 3199 Aqueous Electrolytic Conductivity Lot # 190905

Revisions

Certificate Revisions—Are you Using These Materials?

This is a list of our most recent certificate revisions. Users of NIST SRMs should ensure that they have the most recent certificates. NIST updates certificates for a variety of reasons, such as to extend the expiration date or to include additional information gained from stability testing. If you do not have the most recent certificate for your material, you can print or view a copy from the website at: http://www.nist.gov/srm,
or contact SRM at:
Phone: (301) 975-6776
Fax: (301) 926-4751
Email: srminfo@nist.gov.

SRM 189b Potassium Tetroxalate Dihydrate pH Standard
New Expiration Date:
30 June 2007

SRM 625 Spectrographic Zinc-Base Die-Casting Alloy A
Editorial Changes

SRM 626 Spectrographic Zinc-Base Die-Casting Alloy B
Editorial Changes

SRM 627 Spectrographic Zinc-Base Die-Casting Alloy C
Editorial Changes

SRM 628 Spectrographic Zinc-Base Die-Casting Alloy D
Editorial Changes

SRM 629 Spectrographic Zinc-Base Die-Casting Alloy E
Editorial Changes

SRM 630 Spectrographic Zinc-Base Die-Casting Alloy F
Editorial Changes

SRM 656 Silicon Nitride Powders for Quantitative Analysis by Powder Diffraction
Change in certified value

SRM 676 Alumina Internal Standard for Quantitative Analysis by X-ray Powder Diffraction
Change in description and certified value of phase purity

SRM 772a Magnetic Moment Standard Nickel Sphere
Editorial Changes

SRM 917b D-Glucose (Dextrose)
Technical Changes;
New Expiration Date:
31 December 2010

SRM 966 Toxic Metals in Bovine Blood
Editorial Changes

SRM 1511 Multi-Drugs of Abuse in Freeze-Dried Urine
Change in the certified value

SRM 1619b Sulfur in Residual Fuel Oil
Editorial Change

REVISIONS continued . . .

SRM 1640 Trace Elements in Natural Water
New Expiration Date:
01 June 2008

SRM 1660a Methane and Propane in Air
Lot # 13-XX-E
New Expiration Date:
01 January 2010

SRM 1662a Sulfur Dioxide in Nitrogen
Lot # 93-G-XX
New Expiration Date:
06 June 2009

SRM 1846 Infant Formula
Technical and Editorial Changes;
New Expiration Date:
30 September 2006

SRM 1878a Respirable Alpha Quartz Quantitative X-ray Powder Diffraction
Change in the certified value

SRM 1879a Respirable Cristobalite Quantitative X-ray Powder Diffraction
Change in the certified value

SRM 2232 Indium DSC Calibration Standard
Editorial Changes

SRM 2294 Reformulated Gasoline
Editorial Change;
New Expiration Date:
31 December 2012

SRM 2295 Reformulated Gasoline
Editorial Change
New Expiration Date:
31 December 2012

SRM 2296 Reformulated Gasoline
Editorial Change
New Expiration Date:
31 December 2012

SRM 2297 Reformulated Gasoline
Editorial Change
New Expiration Date:
31 December 2012

SRM 2389 Amino Acids in 0.1 mol/L Hydrochloric Acid
Technical Revisions;
New Expiration Date:
01 January 2010

SRM 2453 Hydrogen in Titanium Alloy
Editorial Changes

SRM 2517a High Resolution Wavelength Calibration Reference for 1510 nm – 1540 nm Acetylene $^{12}C_2H_2$
Editorial and Contact Changes

SRM 2612a Carbon Monoxide in Air
Lot # 23-F-XX
Technical Revisions;
New Expiration Date:
20 October 2011

SRM 2613a Carbon Monoxide in Air
Lot # 22-XX-E
Technical Revisions;
New Expiration Date:
20 October 2011

SRM 2627a Nitric Oxide in Nitrogen
Lot # 48-G-XX
New Expiration Date:
01 March 2009

SRM 2628a Nitric Oxide in Nitrogen
Lot # 49-G-XX
New Expiration Date:
01 March 2009

SRM 2635a Carbon Monoxide in Nitrogen
Lot # 58-C-XX
New Expiration Date:
22 August 2011

REVISIONS continued . . .

SRM 2639a Carbon Monoxide in Nitrogen Lot # 54-D-XX
Editorial Changes;
New Expiration Date:
05 May 2011

SRM 2640a Carbon Monoxide in Nitrogen Lot # 53-C-XX
Editorial Changes;
New Expiration Date:
03 May 2011

SRM 2641a Carbon Monoxide in Nitrogen Lot #52-C-XX
New Expiration Date:
20 May 2011

SRM 2646a Propane in Nitrogen Lot # 103-C-XX
New Expiration Date:
01 January 2009

SRM 2657a Oxygen in Nitrogen Lot #73-C-XX
New Expiration Date:
01 July 2011

SRM 2658a Oxygen in Nitrogen Lot #72-C-XX
New Expiration Date:
01 July 2011

SRM 2750 Methane in Air Lot #211-C-XX
New Expiration Date:
18 July 2011

SRM 2751 Methane in Air Lot # 212-C-XX
New Expiration Date:
01 July 2011

SRM 2764 Propane in Air Lot # 2764-XX-A
New Expiration Date:
01 August 2011

SRM 2775 Sulfur in Foundry Coke
Added Reference Values

SRM 2810 Rockwell C Scale Hardness–Low Range
Changes in the Expiration Date; Editorial Changes

SRM 2811 Rockwell C Scale Hardness–Mid Range
Changes in the Expiration Date; Editorial Change

SRM 2812 Rockwell C Scale Hardness–High Range
Changes in the Expiration Date; Editorial Changes

SRM 3000 Benzene in Methanol
New Expiration Date:
31 January 2011

SRM 3001 Toluene in Methanol
New Expiration Date:
31 January 2011

SRM 3002 Ethylbenzene in Methanol
New Expiration Date:
31 January 2011

SRM 3003 o-Xylene in Methanol
New Expiration Date:
31 January 2011

SRM 3004 m-Xylene in Methanol
New Expiration Date:
31 January 2011

SRM 3005 p-Xylene in Methanol
New Expiration Date:
31 January 2011

SRM 3006 Carbon Tetrachloride in Methanol
New Expiration Date:
01 August 2010

SRM 3008 Methylene Chloride in Methanol
New Expiration Date:
01 August 2010

SRM 3009 1,2-Dichloropropane in Methanol
New Expiration Date:
01 August 2010

3010 Tetrachloroethene (Tetrachloroethylene) in Methanol
New Expiration Date:
01 August 2010

REVISIONS continued . . .

SRM 3011 1,1,1-Trichloroethane in Methanol
New Expiration Date: 01 August 2010

SRM 3012 1, 2-Dichloroethane in Methanol
New Expiration Date: 01 August 2010

SRM 3014 1,2,3-Trichloropropane in Methanol
New Expiration Date: 01 August 2010

SRM 3015 Isopropylbenzene in Methanol
New Expiration Date: 01 August 2010

SRM 3016 sec-Butylbenzene in Methanol
New Expiration Date: 01 August 2010

SRM 3075 Aroclor 1016 in Transformer Oil
Editorial Changes

SRM 3076 Aroclor 1232 in Transformer Oil
Editorial Changes

SRM 3077 Aroclor 1242 in Transformer Oil
Editorial Changes

SRM 3078 Aroclor 1248 in Transformer Oil
Editorial Changes

SRM 3079 Aroclor 1254 in Transformer Oil
Editorial Changes

SRM 3080 Aroclor 1260 in Transformer Oil
Editorial Changes

SRM 3081 Aroclor 1016 in Methanol
Editorial Changes

SRM 3082 Aroclor 1232 in Methanol
Editorial Changes

SRM 3083 Aroclor 1242 in Methanol
Editorial Changes

SRM 3084 Aroclor 1248 in Methanol
Editorial Changes

SRM 3085 Aroclor 1254 in Methanol
Editorial Changes

SRM 3086 Aroclor 1260 in Methanol
Editorial Changes

SRM 3090 Aroclors in Methanol (SRMs 3075 to 3080)
Editorial Changes

SRM 3091 Aroclors in Methanol (SRMs 3081 to 3086)
Editorial Changes

SRM 3104a Barium Standard Solution Lot # 992907
Technical Revision;
New Expiration Date: 15 July 2007

SRM 3107 Boron Standard Solution Lot # 991907
New Expiration Date: 05 October 2007

SRM 3121 Gold Standard Solution Lot # 991806
Technical Revision;
New Expiration Date: 27 July 2007

SRM 3129a Lithium Standard Solution Lot # 000505
Technical Revision;
New Expiration Date: 13 September 2008

SRM 3138 Palladium Standard Solution
Technical Revision;
New Expiration Date: 22 December 2007

SRM 3140 Platinum Standard Solution Lot # 000615
Technical Revision;
New Expiration Date: 27 July 2009

REVISIONS continued . . .

SRM 3145a Rubidium Standard Solution
Lot # 891203
Technical and Editorial Changes;
New Expiration Date:
19 June 2006

SRM 3152a Sodium Standard Solution
Lot # 990907
Changes in the certified value and uncertainty;
New Expiration Date:
15 July 2007

SRM 3156 Tellurium Standard Solution
Lot # 892901
Technical Revisions;
Expiration Date:
01 April 2006

SRM 3192 Aqueous Conductivity
Lot # 031121
Change in the Certified Value and Uncertainty;
New Expiration Date:
14 September 2007

SRM 3194 Aqueous Electrolytic Conductivity
Lot # 011511
Editorial Changes;
New Expiration Date:
10 August 2007

RM 8603 Lead Ore GBW 07236
Editorial Changes

RM 8415 Whole Egg Powder
Editorial Changes

Order NIST SRMs Online

You can now order NIST SRMs through our new online ordering system, which is constantly being updated. This system is efficient, user-friendly and secure. Our improved search picks up keywords on the detail page along with the words in the title of each SRM.

In addition, we are in the midst of a project to add numerous certificate references for each SRM online. Please also note we are also adding numerous historical archive certificates online for your convenience.

https://srmors.nist.gov

Please Register Your Certificate Online!

Users of NIST SRMs should ensure that they have the most recent certificates.

http://www.nist.gov/srd/srmregform.htm

SRM 2006 MARKETING AND TECHNICAL CATALOGS NOW ON CD

If you would like a copy of our January 2006 SRM Marketing or Technical Catalogs on CD please call, fax, or email us at: Ph: 301-975-6776 Fax: 301-948-3730
Email: srminfo@nist.gov. These CDs are helpful to SRM users who do not have access to our online catalog on the Internet.

PITTCON 2006 WORKSHOPS – Session 80

National Institute of Standards and Technology (NIST)

Standard Reference Materials (SRMs) for Environmental, Food, Metal, Fossil Fuel, and Forensic DNA Analysis- arranged by Stephen A. Wise

March 12 – Sunday Afternoon Room 202C

1:00 - Introductory Remarks - Stephen A. Wise

1:05 - (80-1) SRMs to Support Calibration Traceability for Inorganic Analysis: Solutions, Metals, and Fossil Fuels - Gregory C. Turk,

1:40 - (80-2) Standard Reference Materials for Measurement of Inorganic Constituents in Environmental Samples - Karen E. Murphy

2:15 - (80-3) Current Activities in Environmental Standard Reference Materials for Trace Organic Contaminants - Michele M. Schantz

2:50 - RECESS

3:05 - (80-4) SRMs for Analysis of Foods and Dietary Supplements - Katherine Sharpless

3:40 - (80-5) Forensic DNA Standard Reference Materials - John M. Butler, Margaret C. Kline

4:15 - (80-6) The U.S. Measurement System Priorities for Metrology Research, Development and Service Delivery - Robert L. Watters, Jr.

NIST SRM 2006 Exhibit Schedule

Pittsburg Conference (PITTCON)
March 13-16, 2006
Orlando, FL

American Chemical Society (ACS)
March 26-30, 2006
Atlanta, GA

CBD-IAI
March *31-April 1, 2006*
Charlottesville, NC

NOBCChE
April 9-15, 2006
Los Angeles, CA

BIO 2006
April 9-12, 2006
Chicago, IL

Analytica 2006
April 25-28, 2006
Munich, Germany

Berm 10
April 30 -May 4, 2006
Charleston, SC

IFT-Food Expo
June 24- 28, 2006
Orlando, FL

AACC -Clinical Lab Expo (AACC)
July 25 -27, 2006
Chicago, IL

NCSL Symposium (NCSL)
August 7-10, 2006
Washington, DC

DIOXIN 2006
August 21-25, 2006
Oslo, Norway

American Chemical Society (ACS)
September 10-14, 2006
San Francisco, CA

AOAC Annual Meeting (AOAC)
September 17- 21, 2006
Minneapolis, MN

MS&T 05-Materials Science & Technology (MS&T)
October 16-18, 2006
Cincinnati, OH

Eastern Analytical Symposium (EAS)
November 14-17, 2006
Somerset, NJ